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ARCHEOLOGY AND ETHNOLOGY.[1]

The non existence of paleolithic culture.—There appeared in the January number of THE AMERICAN NATURALIST a criticism by Mr. H. C. Mercer of my recent paper " On the Evolution of the Art of Working in Stone," which induces me to ask for space for an answer.

My paper in the *Anthropologist* for July 1893 was necessarily restricted, and, although only a preliminary one, had I thought, made some points clear in the discussion of paleolithic man which appeared to me not to have had particular attention drawn to them.

Geology, anatomy and prehistoric archeology are all of the greatest value in the study of the early history and development of the human race, but a study of the technology of archeology, I contended is equally important in determining the mechanical status of the race at any period of its existence.

(1) I contend that " Teshoa or chip-knife " making at one blow, or making a "turtle back" at twenty blows (if turtle back is all we want), may be as easy as, but is not *easier*, than hammering and grinding. The present status of archaeological information fully justifies the expression of a doubt that either a " teshoa " or "turtle back " is a completed instrument.

(2) That Pottery is recorded as found in the lower European cave strata, (and the authorities who make the assertion are fully sustained) " warrants a review of the French classification."

(3) " Why " Says Mr. Mercer " men who bored, polished and carved bone, sketched realistic designs, and chipped blades equal in make to Mexican sacrificial knives did not polish stone, seems incomprehensible. But the European museums clearly assert that no polished stone tool has been found in the caves. If true, the fact is conclusive against Mr. McGuire."

One of the chief points which my paper raised was, that the ability to do these things (bone polishing etc.) was sufficient proof of itself that those who did them could and did polish stone tools, and further, such polishing required less acquaintance with the fracture of stones, simpler tools, and less technical ability, than was necessary in chipping and flaking stone, and in scraping and etching bone, etc.

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[1] This department is edited by H. C. Mercer, University of Pennsylvania.

I do not deny that the hammer was used for many different purposes, but assert that its shape proves it to be intended for stone working, and not for corn bruising.

(4) I think that this is answered under No. 1. I deny that the "Coup-de-poing" materially differs from the "turtle-back." Both are apparently unfinished implements. The "turtle-back" presents its refractory part in a ridge down the center of a proposed implement. The refractory part of a "coup-de-poing" is on its periphery, and is generally due to a knot in the stone. No two stones have the same fracture; the same stone will show a variety of fracture in a given vein.

(5) Polished implements have been found in the caves also in the clays, and in the bogs; in localities entitling them to be classed as of the quaternary period with as much claim of right as any chipped stone.

(6) Admits that pottery is not to be expected in the drift.

The admission that European cave classification requires revision carries with it the admission that it is erroneous.

I fully realize that it is considered by a very large class of archeologists as heterodox, to deny the existence of a paleolithic period. The classification of paleolithic periods into those of St. Acheul, Chelles, Mousterian, Magdalenian, etc., is demonstrably inaccurate, and needs revision and simplification. The advocates of paleolithic man assert that his mechanical development was so low, that the only stone work which he was capable of performing, was to knock flakes from stones with a few blows at most and subsequently to use them as cutting implements, by holding them in the naked hand, yet they admit that while he was in this low stage of mechanical development he was possessed of artistic attainments, and that he could and did etch or engrave the representations of animals on stone, bone and ivory and that he could at this time make the gravers and other tools which such work required.

They further assert that he went through a distinct period extending over centuries, in the gradual development of the art of chipping stone, until finally he made chipped implements of exquisite shape which cannot now be duplicated. At the time when he had scarcely learned to chip rough flakes on one side, it is shown that Paleolithic man made needles of bone with eyes carefully drilled through them, that he made bone pins and ground them, that he fashioned spear heads of bones with barbs or opposite sides, that he possessed organized government and recognized in the Batons-de-Commandment the insignia of rank; these articles being found with an arctic fauna necessitate the admission that he was sufficiently clothed to resist the cold, if so, he must have possessed fire and shelter, all of which would require intelligence. It cannot be denied that with such weapons as he possessed, he successfully attacked a fauna more powerful, and presumably more ferocious, than any now known to man. Man cracked the bones of these animals, and had, it is asserted, a particular shape of spoon with which to extract the marrow, yet it is seriously argued that man in a cultural state such as indicated, had not learned the art of rubbing one stone against another in order to give it a cutting edge, but did rub one piece of ivory on a stone to smooth it for the reception of an engraving on it of a mastodon. Ivory is little at all softer than certain of the stones from which the so-called Neolith was often made. My experiments and my reason and every hour's work I have done, convince me that with our *present* data no one has the right to divide the stone age into a chipped and polished age, much less to divide the chipped age as has been done. The argument has no reliable evidence to support it.

I am sure I will be judged leniently when I claim that an intelligent study of archeology depends for its value upon some different classification than now sustains it.

Whether such classification can be made upon some such basis as was laid down twenty years ago by Prof. Otis T. Mason, or (if the classification is to be confined to stone implements alone,) whether that of DeMortillet or of Holmes will develop in the most valuable hypothesis, I cannot say. I am inclined, however, to believe in that of the latter, if there be added to it an arrangement to study the handles of implements, the development of attachment of the same, and the rapidity with which they may be worked, for the working part of most implements show little change in form from the earliest known.

J. D. McGuire.[2]

Professor W. Boyd Dawkins on Paleolithic Man in Europe.—How much Prehistoric Archeology leans upon Paleontology has recently been shown by Prof. W. Boyd Dawkins (Journal of the Anth. Inst. of Grt. Britain and Ireland, Feb., 1894, p. 242) in a comparison, by fossils and human remains, of the two great divisions of prehistoric time in Europe. He thus compares them:

(a) The earlier period, called *Paleolithic*, now cold, now hot, of the Hippopotamus, Mammoth, Rhinoceros, Musk Ox, Reindeer, Cave Hyena, Cave Lion and Cave Bear, with man a nomad hunter lacking all domestic animals, who chipped but could not polish stone, and

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[2] Of the Smithsonian Institution, Washington, D. C.

(b) The later time, called *Neolithic,* of still existing species and climate, with man an agriculturist possessor of the dog, goat and hog, who chipped and could also polish stone and make pottery.

Prof. Dawkins passes by the questioner who might here ask whether the first described man was really paleolithic, and accepts without hesitation the two custom honored titles, Paleolithic and Neolithic, as labels for his paleontological periods.

But if M. Dupont found the celebrated earthen bowl along with boar, horse, urus, chamois, goat, wildcat, hare, beaver, and reindeer bones, in the Trou du Frontal (on the Lesse near Furfooz) and at the Engis Cave (near Liege), a potsherd at the same spot where Dr. Schmerling had found his "Philosopher's" skull along with Mammoth, horse, hyena and bear bones in 1833; and if a bit of pottery was really found in the layer of cave bear, cave lion, rhinoceros, hyena, bison and mammoth bones, at Surignac Cave (Haute Garrone, France), after a farmer named Bonnemaison had mixed up the layers and lost the human bones; if pottery was found in the alleged paleolithic caves of Nabrigas (Prof. Joly), Vergisson (M. Fery), and Trou Rosette; and if MM. de Puydt and Lohest found three burned potsherds about nine feet down in the La Biche aux Roches Cave (near Spy, Belgium), under elephant and rhinoceros bones; then the word paleolithic, devised to signify an early non-pottery-making, non-stone-polishing stage of human culture, would lose mnch of its meaning.

Sir John Lubbock, when called upon to defend his word and its notion that man chipped a long time before he polished stone, cannot look for support to the flaking Australians, who, in the Kamalarai Country, used a ledge of sandstone rock as an axe polisher (Frazer's Aborigines of New South Wales, Sydney, p. 76) and often ground tomahawks and grooved axes (Brough Smith's Aborigines of Victoria, 1, p. 366, figs. 177, 178, 183, 189); though he may, it seems, look to the recently (about 1850) extinct Tasmanians, who never appear to have polished or got beyond chipping stone tools that resemble what M. de Mortillet calls Mousterian flakes.

It is the paradoxical mixing of the fauna of the above named earlier or paleolithic time in Europe that chiefly interests Prof. Dawkins and would call for such explanations as alternate periods of heat and cold, as hippopotamus and reindeer migrations, and as the preservation of animal carcasses in ice as food for later carnivora; to account for certain caves where, to the confusion of the naturalist, the bones of the boreal Mammoth and tropical Hippotamus are mixed together.

and heat loving spotted hyenas have gnawed the fresh bones of the arctic reindeer.

Puzzles like these may be finally explained by the study of such superposed plistocene layers as those of Abbeville, which, according to M. G. d'Ault du Mesnil, indicate that the fauna grew newer and a warm climate became colder as we approach the latest bed, as follows:

SOMME GRAVELS, ABBEVILLE.

(a) UPPER TERRACE (oldest).

Elephas antiquus, *E. primigenius*, *Rhinoceros merkii*, *R. tichorinus*, *Hippopotamus major*, *Ursus speleus*, *Cervus megacerus*, *Hyena spelœa*, *Machœrodus cultridens*, *Trogontherium cuvieri*, *Equus caballus*, *Bos primigenius*.

(b) MIDDLE TERRACE.

Elephas antiquus (declining), *E. primigenius*, *R. tichorninus* (increasing), *Equus caballus*, *Cervus elaphus*, *Bison priscus*, *Rhinocerus merkii* (declining), *Hippopotamus major*, *Ursus speleœus*, *Cervus megaceros*, *Hyœna spelœa*, *Machœrodus cultridens*, *Trogontherium cuvieri*, *Equus caballus*, *Bos primigenius*.

(c) LOWER TERRACE (latest).

Elephas primigenius, *Equus caballus* (dominant), *Rhinocerus tichorinus* (numerous), Reindeer, *Cervus elephus*, *Cervus tarandus*, *Bos primigenius*, Ursus (not determined) and *Cyrena fluminalis*.

Turning to the associated human remains, in Prof. Dawkins' first period, cave runs into cave and rock shelter into Drift so unclassifiably that we had better, he thinks, stop subdividing the epoch into Drift, Mousterian, Solutrian and Magdalenian, and call it all by one name, Paleolithic.

But while objecting to breaks in his Paleolithic, the sharp break between it and the Neolithic is his main point. As no grading together of fossil remains bridges over this gulf, so, he thinks, (spite of pottery rumors from paleolithic caves) that the human relics of period a, and period b, show a corresponding hiatus.

The few Drift-like chipped blades, produced at the Institute meeting from the (period b) Cissbury neolithic quarry were easily explainable as inchoate celts and wastrels, and the fact of their looking like (period a) Drift specimens was enough to call a halt to the surface gatherer and the labeller by type and, we might add, clear the museums of Europe of many hastily classified "paleoliths." Perhaps this was the same kind of Drift likeness that I had observed in April, 1893, among the ruder incipient forms at the (period b) Neolithic quarry of Spiennes in Belgium (The Archæologist, July, 1893. Am. Naturalist, Nov., 1893). But at Spiennes as at all other quarries that I have studied and mutually compared, it is evident that the *results* of each blade maker's workshop, by which alone we can explain the wastrels, must be first understood. Whatever the similarity between Neolithic Cissbury and the paleolithic Drift (and the British Museum specimens show none) neolithic Spiennes does not come much nearer the paleolithic drift workshop of Abbeville, through the similarity of rudest wasters in either case, than it does to Flint Ridge, Ohio.

If Prof. Dawkins recognizes no human chipped implement grading out of his Paleolithic period, so he will not with Prof. Prestwich allow the work of a more primitive alleged predecessor of the Drift man to grade into it, holding that the variously nicked flints "Plateau implements" found by Mr. B. Harrison on the high Kentish downs are of Drift and not pre-Drift age. But he does not clearly say whether he thinks that these curious specimens are blade refuse, finished implements or, as Mr. W. G. Smith of Dunstable (who writes me that he has found many in the Drift-blade bearing gravels at Caddington) regards them, the work of nature.

Prof. Dawkins showed also at the meeting a good example of a modern "paleolith," a North American Indian soapstone quarry pick, and with it a stone tool very modern yet simpler in form than any paleolith, one of Dr. Leidy's much ignored and often misunderstood "teshoas," seen used by Utes, together with a set of Trenton specimens obtained by Prof. Dawkins and which he said should, with their fellows collected by Dr. Abbott and Professors Putnam, Haynes, Morse, Carr, and Shaler, be placed, until further proof be furnished, in a suspense account.—H. C. Mercer.